Air Force Research Laboratory|AFRL
Science and Technology for Tomorrow's Air and Space Force

SUCCESS STORY

AFRL DEMONSTRATES ADVANCED SIMULATION CAPABILITY

Testing new directed energy weapon (DEW) technology in a virtual computer simulation environment enables the Air Force to evaluate the technology without the expense or safety precautions resulting from actually building the weapon and testing it in a real life situation.

Air Force Research Laboratory
Wright-Patterson AFB OH

Accomplishment

AFRL completed the Tactical High-Energy Laser Utility Study (THELUS) to investigate the usefulness of a DEW in a simulated tactical air-to-air engagement. During the simulation, six tactically rated pilots competed in two teams: a blue team with two pilots and a red team with four pilots.

The teams engaged each other over a 3-day period in two types of test scenarios. For the first, baseline scenarios, engineers outfitted all planes to achieve the same flight characteristics and missile loadout. During the second scenarios, they added DEWs to the blue team's planes, while the red team kept its conventional weapons. The engineers collected valuable weapon performance data and pilot feedback on the DEW's design, usefulness, and tactics, including information on how to improve future studies.

Background

AFRL's simulation environment consists of an advanced suite of simulation tools working together to create a real-time, virtual environment, a capability culminating several years of work that included the development and integration of several computer models into the simulation environment.

The THELUS simulation enabled engineer and warfighter evaluation of the DEW in a controlled, safe environment prior to expending resources to produce the actual weapon. THELUS results will also provide vital information to aid AFRL decision makers with future investment strategies.

Air Vehicles
Emerging Technologies

Additional Information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (VA-S-06-01)